NATURAL RESOURCES CONSERVATION SERVICE
PACIFIC BASIN AREA
CONSERVATION PRACTICE STANDARD

RESIDUE MANAGEMENT, NO TILL/STRIP TILL

(Hectare, Acre)
CODE 329A

DEFINITION

Managing the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops in narrow slots, or tilled or residue free strips in soil previously untilled by full-width inversion implements.

PURPOSES

This practice may be applied as part of a conservation management system to support one or more of the following:

- Reduce sheet and rill erosion;
- Maintain or improve soil organic matter content;
- Conserve soil moisture; and,
- Provide food and escape cover for wildlife.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all cropland and other land where crops are grown.

This standard includes tillage and planting methods commonly referred to as no till, zero till, slot plant, row till, zone till, or strip till.

CRITERIA

General Criteria Applicable to All Purposes Named Above

Loose residues to be retained on the field, shall be uniformly distributed on the soil surface. Planters or drills shall be equipped to plant directly through untilled residue or in a tilled seedbed prepared in a narrow strip along each row by planter attachments such as rotary tillers, sweeps, multiple coulters, or row cleaning devices. Hand planting is allowed.

Residues shall not be burned, or disturbed by full-width tillage operations except as follows:

1. Seedbed preparation, planting, and fertilizer placement shall disturb no more than one third of the row width. The row area formed by the planting operation shall be level with or slightly above the adjacent row middles unless the rows are planted on the contour.
2. If row cultivation or spot treatment for weed escapes, leveling ruts, or similar operations become necessary, tillage shall be limited to undercutting operations which minimize burial of surface residue.

Additional Criteria to Reduce Sheet and Rill Erosion

The amount of randomly distributed, flat residue needed to reduce erosion within the soil loss tolerance (T) or any other planned soil loss objective, shall be determined using current approved erosion prediction technology. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount needed. Calculations shall account for the effects of other practices in the conservation management system.

Additional Criteria to Maintain or Improve Soil Organic Matter Content

The amount of residue needed to achieve the desired soil condition shall be determined using the current approved soil conditioning index procedure. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount of cover needed. Calculations shall account for the effects of other practices in the conservation management system.

Additional Criteria to Conserve Soil Moisture

A minimum quantity of 50 percent residue cover shall be maintained throughout the

year. Residue shall be evenly distributed and maintained on the soil surface. Partial removal of residue by means such as baling or grazing shall be limited to retain the amount needed.

Additional Criteria to Provide Food and Escape Cover for Wildlife

Residue height, amount, and time period shall be determined using an approved habitat evaluation procedure. Residues shall not be removed unless it is determined by the habitat evaluation procedure that removal would not adversely affect habitat values.

CONSIDERATIONS

No till or strip till may be practiced continuously throughout the crop sequence, or may be managed as part of a system which includes other tillage and planting methods such as mulch till. Selection of acceptable tillage methods for specific site conditions may be aided by an approved Soil Tillage Suitability Rating.

Production of adequate amounts of crop residues necessary for the proper functioning of this practice can be enhanced by selection of high residue producing crops and crop varieties in the rotation, use of cover crops, and adjustment of plant populations and row spacing.

Maintaining a continuous no till system will maximize the improvement of soil organic matter content. Also, when no till is practiced continuously, soil re-consolidation provides additional resistance to sheet and rill erosion.

Leaving rows of unharvested crop standing at intervals across the field can enhance the value of residues for wildlife habitat.

PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and Operation and Maintenance described in this standard. Specifications shall be recorded using approved specification 329A – 3 sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

No operation and maintenance requirements have been identified for this practice.